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DOUBLE BALLOON CATHETER FOR COMBINED RETROPUBIC PROSTATECTOMY

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Various methods are available for a surgical treatment of prostatic hypertrophy. The patients receiving such therapy are mostly aged risky patients and therefore it is desirable to employ the method to which the surgeons are well accustomed so that the amount of bleeding is minimized and operation is completed in short time. In our clinic, prostatectomy is conducted by combined retropubic technique in most of the cases. The amount of bleeding during such operation is about less than 500 ml in the average which is fairly stable. What we should like to discuss here is the blood loss due to postoperative hematuria. Such postoperative blood loss cannot be neglected, since it is not rare that the total blood loss both during and after the operation amounts even up to 1,000 ml. Prolongation of postoperative hematuria delays the ambulation and affects adversely to the prevention of postoperative complication. Various methods have been tried so far for hemostasis after prostatomyomectomy. The method which has been most commonly employed is perhaps the use of Foley catheter. We have also been using this method. Recently, however, we tried Coleman double balloon hemostatic catheter (C. R. BARD) and obtained the results not at all inferior to but even better than the former method.

METHODS AND RESULTS

The characteristic appearance of this catheter is that it has a doughnut-shaped prostatic balloon and sphere-shaped bladder

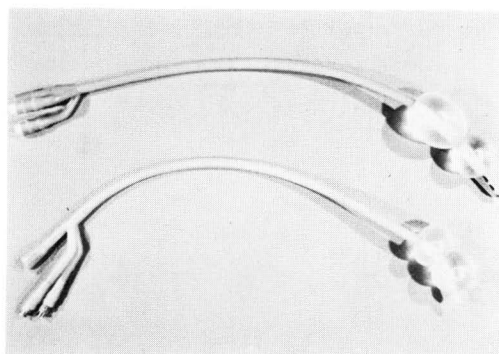


Fig. 1

balloon, and two to three eyes at its whistle tip (Fig. 1). In the combined retropubic prostatectomy, we apply median incision at the bladder neck from bladder wall to prostatic capsule, remove prostatic tissue, control arterial bleeding at vesical neck by ligature and close the prostatic capsule and the bladder wall and then suture the abdominal wall. The double balloon catheter is inserted from urethra before suturing the prostatic capsule. Prostatic balloon is placed in the prostatic bed and inflated so big as to fit to the size of the bed so that the venous bleeding from the prostatic bed may be controlled. If the bladder balloon is inflated to 20~30 ml at the time of closure of the bladder wall, the more satisfied hemostatic effect at the neck is obtained. Prostatic balloon is deflated by 5~10 ml so that it will be emptied after 2 days. Since by the third postoperative day gross hematuria might almost disappear in the average, bladder balloon could be emptied and catheter could be removed (Table 2). Thus the patient

Table 1. Combined retropubic prostatectomy with conventional hemostatic balloon catheter.

Case	Age	Blood loss during operation (ml)	Transfusion (ml)	Weight of tissue removed (g)	Duration of hematuria (days)	Day of catheter removal
1	62	450	0	26	4	5 th day
2	71	500	0	16	3	5 th day
3	73	350	600	10	4	6 th day
4	59	800	2000	27	4	5 th day
5	72	450	400	38	5	6 th day
6	70	250	600	15	4	3 th day
7	72	1500	1000	40	5	6 th day
8	74	400	0	26	3	4 th day
9	75	450	0	20	3	4 th day
10	77	350	0	25	4	5 th day

Table 2. Combined retropubic prostatectomy with double balloon hemostatic catheter.

Case	Age	Blood loss during operation (ml)	Transfusion (ml)	Weight of tissue removed (g)	Duration of hematuria (days)	Day of catheter removal
1	77	290	800	25	4	4 th day
2	67	700	400	60	2	3 rd day
3	60	500	0	68	2	3 rd day
4	73	420	0	20	2	2 nd day
5	58	400	0	22	0	3 rd day
6	77	600	0	30	1	3 rd day
7	69	350	0	62	3	3 rd day
8	73	700	800	10	3	3 rd day
9	55	400	0	45	0	2 nd day
10	67	650	1000	45	4	5 th day

could leave bed on the 3rd day after the operation. While, in the conventional method, the inflated balloon retained in the prostatic bed has to be pulled distally to obtain a sufficient hemostasis, and postoperative hematuria continued for about 4 days in the average and catheter was removed on the 5th day. Thus the patient left bed on the 5th day in most of the cases (Table 1).

DISCUSSION

The report on double balloon catheter is found in the article of the Journal of Urology written by Vincent J. Oddo in 1958. In the report. The author recommends it because of the outstanding hemostatic effect. As shown in the model drawing (Fig. 2), if the capacity of prostatic balloon is properly adjusted according to the size of

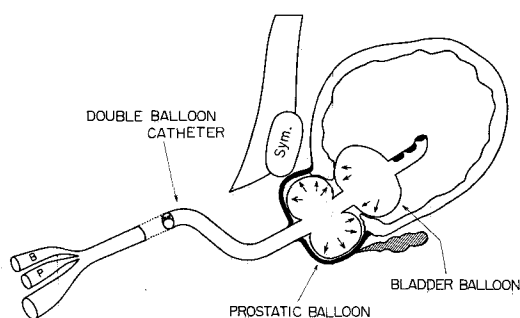


Fig. 2

the prostatic bed, prostatic balloon gives a uniform compression effect upon the entire prostatic bed and controls bleeding from the prostatic bed. On the other hand, at vesical neck, prostatic balloon charges continuous strain on the bladder balloon and attracts the latter to the internal surface of vesical neck. Such automatic

outward traction of bladder balloon makes it unnecessary to attract urethral catheter which is required in the conventional method employing Foley catheter. It is clear that inflow of blood from the vesical neck into the bladder is prevented and therefore such trouble as obstruction of catheter by blood clots does not occur. It is also supposed that the amount of postoperative blood loss is very little, because the degree of bloody urine in postoperative period was extremely minor and the bleeding period was short and that such effect will be quite helpful for prevention of complication and earlier return of the patient to the society.

SUMMARY

Double balloon hemostatic catheter was

used in 10 cases for the purpose of hemostasis after combined retropubic prostatectomy. The following satisfactory results were obtained: The complete disappearance of postoperative hematuria was noted on the 2nd day in the average and shortened to one half of the average of the cases using Foley catheter.

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二重バルーンカテーテル使用による前立腺摘出術の経験

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われわれは前立腺被膜下摘除術を combined method によりおこなっているが, 術中出血量が少なくても, 術後長期の血尿のためにやむなく輸血をおこなわねばならない症例にときに遭遇する。この点を改善すべく, 今回われわれは術後の止血の目的で, 10例の

前立腺被膜下摘除術症例に術後二重バルーンカテーテルを用いたところ, 満足すべき結果が得られた。すなわち, 術後の血尿の消失は平均2日目であり, 従来用いていた Foley カテーテル使用症例に比し, 術後血尿持続期間を約1/2に短縮できた。